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### 1 [Fast detection of communication patterns in distributed executions](#)

Thomas Kunz, Michiel F. H. Seuren

 November 1997 **Proceedings of the 1997 conference of the Centre for Advanced Studies on Collaborative research**

 Full text available: [pdf\(4.21 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

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### 2 [Pen computing: a technology overview and a vision](#)

André Meyer

 July 1995 **ACM SIGCHI Bulletin**, Volume 27 Issue 3

 Full text available: [pdf\(5.14 MB\)](#) Additional Information: [full citation](#), [abstract](#), [citations](#), [index terms](#)

This work gives an overview of a new technology that is attracting growing interest in public as well as in the computer industry itself. The visible difference from other technologies is in the use of a pen or pencil as the primary means of interaction between a user and a machine, picking up the familiar pen and paper interface metaphor. From this follows a set of consequences that will be analyzed and put into context with other emerging technologies and visions. Starting with a short historic ...

### 3 [Power analysis of embedded operating systems](#)

Robert P. Dick, Ganesh Lakshminarayana, Anand Raghunathan, Niraj K. Jha

 June 2000 **Proceedings of the 37th conference on Design automation**

 Full text available: [pdf\(225.31 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

The increasing complexity and software content of embedded systems has led to the frequent use of system software that helps applications access underlying hardware resources easily and efficiently. In this paper, we analyze the power consumption of real-time operating systems (RTOSs), which form an important component of the system software layer. Despite the widespread use of, and significant role played by, RTOSs in mobile and low-power embedded systems, little is known about their power ...

4 Simulation and implementation issues: DIRAC: a software-based wireless router system

Petros Zerfos, Gary Zhong, Jerry Cheng, Haiyun Luo, Songwu Lu, Jefferey Jia-Ru Li  
September 2003 **Proceedings of the 9th annual international conference on Mobile computing and networking**

Full text available: [pdf\(385.84 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Routers are expected to play an important role in the IP-based wireless data network. Although a substantial number of techniques have been proposed to improve wireless network performance under dynamic wireless channel conditions and host mobility, a system support framework is still missing. In this paper, we describe DIRAC, a software-based router system that is designed for wireless networks to facilitate the implementation and evaluation of various channel-adaptive and mobility-aware protoc ...

**Keywords:** distributed router architecture, wireless network

5 Distributed systems - programming and management: On remote procedure call

Patrícia Gomes Soares  
November 1992 **Proceedings of the 1992 conference of the Centre for Advanced Studies on Collaborative research - Volume 2**

Full text available: [pdf\(4.52 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#)

The Remote Procedure Call (RPC) paradigm is reviewed. The concept is described, along with the backbone structure of the mechanisms that support it. An overview of works in supporting these mechanisms is discussed. Extensions to the paradigm that have been proposed to enlarge its suitability, are studied. The main contributions of this paper are a standard view and classification of RPC mechanisms according to different perspectives, and a snapshot of the paradigm in use today and of goals for t ...

6 4.2BSD and 4.3BSD as examples of the UNIX system

John S. Quarterman, Abraham Silberschatz, James L. Peterson  
December 1985 **ACM Computing Surveys (CSUR)**, Volume 17 Issue 4

Full text available: [pdf\(4.07 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

This paper presents an in-depth examination of the 4.2 Berkeley Software Distribution, Virtual VAX-11 Version (4.2BSD), which is a version of the UNIX Time-Sharing System. There are notes throughout on 4.3BSD, the forthcoming system from the University of California at Berkeley. We trace the historical development of the UNIX system from its conception in 1969 until today, and describe the design principles that have guided this development. We then present the internal data structures and ...

7 Promises and reality: Server I/O networks past, present, and future

Renato John Recio  
August 2003 **Proceedings of the ACM SIGCOMM workshop on Network-I/O convergence: experience, lessons, implications**

Full text available: [pdf\(225.62 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Enterprise and technical customers place a diverse set of requirements on server I/O networks. In the past, no single network type has been able to satisfy all of these requirements. As a result several fabric types evolved and several interconnects emerged to satisfy a subset of the requirements. Recently several technologies have emerged that enable a single interconnect to be used as more than one fabric type. This paper will describe the requirements customers place on server I/O networks; t ...

**Keywords:** 10 GigE, Cluster, Cluster Networks, Gigabit Ethernet, I/O Expansion Network, IOEN, InfiniBand, LAN, PCI, PCI Express, RDMA, RNIC, SAN, Socket Extensions, TOE, iONIC, iSCSI, iSER

8 IS '97: model curriculum and guidelines for undergraduate degree programs in information systems 

Gordon B. Davis, John T. Gorgone, J. Daniel Couger, David L. Feinstein, Herbert E. Longenecker

December 1997 **ACM SIGMIS Database , Guidelines for undergraduate degree programs on Model curriculum and guidelines for undergraduate degree programs in information systems**, Volume 28 Issue 1

Full text available:  [pdf\(7.24 MB\)](#) Additional Information: [full citation](#), [citations](#)

9 Forced simulation: A technique for automating component reuse in embedded systems 

Partha S. Roop, A. Sowmya, S. Ramesh

October 2001 **ACM Transactions on Design Automation of Electronic Systems (TODAES)**, Volume 6 Issue 4

Full text available:  [pdf\(283.54 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Component reuse techniques have been a recent focus of research because they are seen as the next-generation techniques to handle increasing system complexities. However, there are several unresolved issues to be addressed and prominent among them is the issue of *component matching*. As the number of reusable components in a component database grows, the task of manually matching a component to the user requirements becomes infeasible. Automating this matching can help in rapid system prot ...

**Keywords:** Component reuse, embedded systems, forced simulation, interface generation, simulation relation, verification

10 The VMP network adapter board (NAB): high-performance network communication for multiprocessors 

H. Kanakia, D. Cheriton

August 1988 **ACM SIGCOMM Computer Communication Review , Symposium proceedings on Communications architectures and protocols**, Volume 18 Issue 4

Full text available:  [pdf\(1.63 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

High performance computer communication between multiprocessor nodes requires significant improvements over conventional host-to-network adapters. Current host-to-network adapter interfaces impose excessive processing, system bus and interrupt overhead on a multiprocessor host. Current network adapters are either limited in function, wasting key host resources such as the system bus and the processors, or else intelligent but too slow, because of complex transport protocols and because of a ...

11 Network attached storage architecture 

Garth A. Gibson, Rodney Van Meter

November 2000 **Communications of the ACM**, Volume 43 Issue 11

Full text available:  [pdf\(224.67 KB\)](#)  [html\(43.39 KB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

**12 Exploiting task-level concurrency in a programmable network interface**

Hyong-youb Kim, Vijay S. Pai, Scott Rixner

June 2003 **ACM SIGPLAN Notices , Proceedings of the ninth ACM SIGPLAN symposium  
on Principles and practice of parallel programming**, Volume 38 Issue 10

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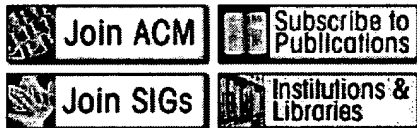
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# 2 [A comparison of the concurrency features of Ada 95 and Java](#)

Benjamin M. Brosgol

 November 1998 **ACM SIGAda Ada Letters , Proceedings of the 1998 annual ACM SIGAda international conference on Ada**, Volume XVIII Issue 6
Full text available: [pdf\(1.99 MB\)](#)Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

**Keywords:** Ada, Java, concurrency, inheritance anomaly, object-oriented programming, tasking, threads

# 3 [A comparison of the object-oriented features of Ada 95 and Java](#)

Benjamin M. Brosgol

 November 1997 **Proceedings of the conference on TRI-Ada '97**
Full text available: [pdf\(2.41 MB\)](#)Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

# 4 [A comparison of Ada and Java as a foundation teaching language](#)

Benjamin M. Brosgol

 September 1998 **ACM SIGAda Ada Letters**, Volume XVIII Issue 5
Full text available: [pdf\(1.49 MB\)](#)Additional Information: [full citation](#), [abstract](#), [citations](#), [index terms](#)

Java has entered the software arena in unprecedented fashion, upstaging languages and technologies that are longstanding players in the industry. Almost unheard of before 1995, the language and its surrounding technology are attracting increasing attention not merely in the hardware and software communities but also among lay users and in the popular press. This phenomenon has not escaped the attention of academia, and a growing number of colleges and universities are looking at Java as a candid ...

5 Corrigenda: a hierarchy-aware approach to faceted classification of object-oriented components

E. Damiani, M. G. Fugini, C. Bellettini

October 1999 **ACM Transactions on Software Engineering and Methodology (TOSEM)**,  
Volume 8 Issue 4

Full text available:  [pdf\(310.50 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

This article presents a hierarchy-aware classification schema for object-oriented code, where software components are classified according to their behavioral characteristics, such as provided services, employed algorithms, and needed data. In the case of reusable application frameworks, these characteristics are constructed from their model, i.e., from the description of the abstract classes specifying both the framework structure and purpose. In conventio ...

6 A hierarchy-aware approach to faceted classification of objected-oriented components

E. Damiani, M. G. Fugini, C. Bellettini

July 1999 **ACM Transactions on Software Engineering and Methodology (TOSEM)**,  
Volume 8 Issue 3

Full text available:  [pdf\(310.25 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

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**Keywords:** code analysis, component repositories, component retrieval, software reuse, user feedback

7 The situation in object-oriented specification and design

George W. Cherry

December 1996 **Proceedings of the conference on TRI-Ada '96: disciplined software development with Ada**

Full text available:  [pdf\(1.61 MB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

8 Simulation and implementation issues: DIRAC: a software-based wireless router system

Petros Zerfos, Gary Zhong, Jerry Cheng, Haiyun Luo, Songwu Lu, Jefferey Jia-Ru Li

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Full text available:  [pdf\(5.14 MB\)](#) Additional Information: [full citation](#), [abstract](#), [citations](#), [index terms](#)

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## 10 Debugging heterogeneous distributed systems using event-based models of behavior

Peter C. Bates

February 1995 **ACM Transactions on Computer Systems (TOCS)**, Volume 13 Issue 1

Full text available:  [pdf\(2.15 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

We describe a high-level debugging approach, Event-Based Behavioral Abstraction (EBBA), in which debugging is treated as a process of creating models of expected program behaviors and comparing these to the actual behaviors exhibited by the program. The use of EBBA techniques can enhance debugging-tool transparency, reduce latency and uncertainty for fundamental debugging activities, and accommodate diverse, heterogeneous architectures. Using events and behavior models as a basic mechanism ...

**Keywords:** behavior modeling, debugging, events

## 11 Models: Process inheritance and instance modification

Guangxin Yang

November 2003 **Proceedings of the 2003 international ACM SIGGROUP conference on Supporting group work**

Full text available:  [pdf\(376.03 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Process technologies play an increasingly important role as the world is being digitalized in nearly every corner. The major obstacles to their massive deployment include reusability and adaptivity. This paper addresses the two crucial problems with one single solution: process inheritance. We discuss what process inheritance is, what mechanisms are needed to support it, and how it can be used to handle exceptions effectively. The ideas and mechanisms are implemented in the runtime system of a p ...

**Keywords:** dynamic modification, inheritance, process language

## 12 Revising old friends: Capriccio: scalable threads for internet services

Rob von Behren, Jeremy Condit, Feng Zhou, George C. Necula, Eric Brewer

October 2003 **Proceedings of the nineteenth ACM symposium on Operating systems principles**

Full text available:  [pdf\(312.83 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

This paper presents Capriccio, a scalable thread package for use with high-concurrency servers. While recent work has advocated event-based systems, we believe that thread-based systems can provide a simpler programming model that achieves equivalent or superior performance. By implementing Capriccio as a user-level thread package, we have decoupled the thread package implementation from the underlying operating system. As a result, we can take advantage of cooperative threading, new asynchronous ...

**Keywords:** blocking graph, dynamic stack growth, linked stack management, resource-aware scheduling, user-level threads

### 13 Rethinking the design of the Internet: the end-to-end arguments vs. the brave new world

Marjory S. Blumenthal, David D. Clark

August 2001 **ACM Transactions on Internet Technology (TOIT)**, Volume 1 Issue 1

Full text available:  pdf(176.33 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

This article looks at the Internet and the changing set of requirements for the Internet as it becomes more commercial, more oriented toward the consumer, and used for a wider set of purposes. We discuss a set of principles that have guided the design of the Internet, called the end-to-end arguments, and we conclude that there is a risk that the range of new requirements now emerging could have the consequence of compromising the Internet's original design principles. Were ...

**Keywords:** ISP, Internet, end-to-end argument

### 14 Power analysis of embedded operating systems

Robert P. Dick, Ganesh Lakshminarayana, Anand Raghunathan, Niraj K. Jha

June 2000 **Proceedings of the 37th conference on Design automation**

Full text available:  pdf(225.31 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

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### 15 Structured APL: a proposal for block structured control flow in APL

Robert G. Willhoft

September 1993 **ACM SIGAPL APL Quote Quad , Proceedings of the international conference on APL**, Volume 24 Issue 1

Full text available:  pdf(1.03 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

APL, although a very powerful language, has failed to gain wide acceptance in part due to its lack of control structures. A proposal is made for introducing structure in APL objects by adding to the items that can be located on the left of the colon (:). These **markers** show the beginning and ends of blocks of code and allow for selection, iteration, and termination. The set of control structures is shown to be robust by showing their use in the creation of traditional control structures. A ...


16

### IS '97: model curriculum and guidelines for undergraduate degree programs in

information systems

Gordon B. Davis, John T. Gorgone, J. Daniel Couger, David L. Feinstein, Herbert E. Longenecker

December 1997 **ACM SIGMIS Database , Guidelines for undergraduate degree programs on Model curriculum and guidelines for undergraduate degree programs in information systems**, Volume 28 Issue 1

Full text available:  [pdf\(7.24 MB\)](#) Additional Information: [full citation](#), [citations](#)

17 Computing curricula 2001

September 2001 **Journal on Educational Resources in Computing (JERIC)**

Full text available:  [pdf\(613.63 KB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)  
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18 Software environments: javaset: declarative programming in Java with sets

G. Rossi, E. Poleo

April 2004 **Proceedings of the first conference on computing frontiers on Computing frontiers**

Full text available:  [pdf\(220.86 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)


In this paper we present a Java library---called JSetL---that offers a number of facilities to support declarative programming like those usually found in logic or functional declarative languages: logical variables, list and set data structures (possibly partially specified), unification and constraint solving over sets, nondeterminism. The paper describes the main features of JSetL and it shows, through a number of simple examples, how these features can be exploited to support a real declarat ...

**Keywords:** Java, constraint programming, declarative programming, nondeterminism

19 OTM: specifying office tasks

F. H. Lochovsky, J. S. Hogg, A. O. Mendelzon, S. P. Weiser

April 1988 **ACM SIGOIS Bulletin , Conference Sponsored by ACM SIGOIS and IEEECS TC-OA on Office information systems**, Volume 9 Issue 2-3

Full text available:  [pdf\(988.62 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

While there are many difficulties in computerizing office tasks, two of the major ones are a lack of appropriate end-user facilities for specifying office tasks and inadequate system-level support for managing office tasks. We are investigating these two issues within the Office Task Manager (OTM) project at the University of Toronto. To address the user-level aspects of specifying office tasks, we believe that a programming-by-example approach to office task specification holds much promise ...

20 4.2BSD and 4.3BSD as examples of the UNIX system

John S. Quarterman, Abraham Silberschatz, James L. Peterson

December 1985 **ACM Computing Surveys (CSUR)**, Volume 17 Issue 4

Full text available:  [pdf\(4.07 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

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conception in 1969 until today, and describe the design principles that have guided this development. We then present the internal data structures and ...

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